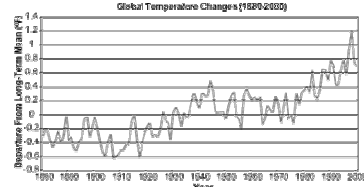


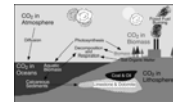
Ecosystems are driven by biodiversity.
How is biodiversity maintained?

Carbon Cycle



Source: U.S. National Climate Data Center, 2001

The earth's "core" temperature is rising



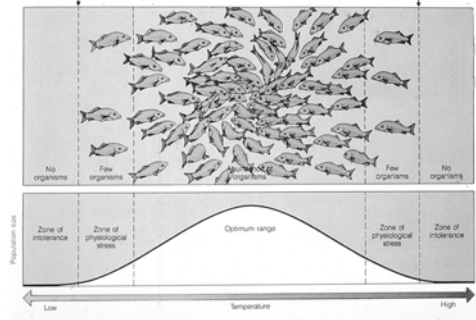
Science Vol. 305; September, 2004

Climate Impact on Plankton Ecosystems in the Northeast Atlantic

Anthony J. Richardson^{1*} and David S. Schoeman²

It is now widely accepted that global warming is occurring, yet its effects on the world's largest ecosystem, the marine pelagic realm, are largely unknown. We show that sea surface warming in the Northeast Atlantic is accompanied by increasing phytoplankton abundance in cooler regions and decreasing phytoplankton abundance in warmer regions. This impact propagates up the food web (bottom-up control) through copepod herbivores to zooplankton carnivores because of tight trophic coupling. Future warming is therefore likely to alter the spatial distribution of primary and secondary pelagic production, affecting ecosystem services and placing additional stress on already-depleted fish and mammal populations.

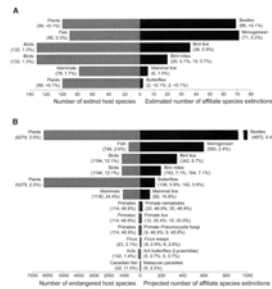
Nature Is "Re-shuffling" The Deck As The Environment Changes



Species Coextinctions and the Biodiversity Crisis

Sean P. Huber^{1,2}, Robert S. Diaz^{1,2}, Michael S. Foster¹, Robert S. Colwell¹, Matthew G. Posada¹, Vincent S. Smith¹

To assess the consequences of species loss on the loss of additional species, a probabilistic model was developed that simulates the loss of species in a community. The model estimates the probability of species loss given the loss of a particular species. The model also estimates the number of species that are lost when a particular species is lost. The model was applied to a community of 100 species. The results show that the loss of a single species can lead to the loss of many other species.



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An Early Food Web



